

## Design Manufacture and Testing of a Combined Alpha-Beta Double Piston Stirling Engine

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**Abstract :** In this paper a unique alpha-beta double piston 'stirling engine' is designed, manufactured and conducted laboratory test to ameliorate the efficiency of the stirling engine. The paper focuses on alpha and beta type engines, capturing their benefits and eradicating their short comings; along with the output observed from the flywheel. In this model alpha engine is kinematically with a piston cylinder arrangement which works quite like a beta engine. The piston of the new cylinder is so designed that it replicates a glued displacer and power piston as similar to that of beta engine. The bigger part of the piston is the power piston, which has a gap around it, while the smaller part of the piston is tightly fit in the cylinder and acts like the displacer piston. We observed that the alpha-beta double piston stirling engine produces 25% increase in power compare to a conventional alpha stirling engine. This working model is a pointer towards for the design and development of an alpha-beta double piston Stirling engine for industrial applications for producing electricity from the heat producing exhaust gases.

**Keywords :** alpha-beta double piston stirling engine , alpha stirling engine , beta double piston stirling engine , electricity from stirling engine

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